

METHODS AND SYSTEMS FOR RELEASING INTRACELLULAR MATERIAL FROM  
CELLS WITHIN MICROFLUIDIC SAMPLES OF FLUIDS

ABSTRACT

The present invention relates to a microfluidic system for processing a cell-  
5 containing liquid. The system includes a lysing zone to receive the cell-containing sample  
and a positioning element to position the cell-containing sample in a lysing position in the  
vicinity of a lysing mechanism. The lysing mechanism releases intracellular material, such as  
DNA or RNA, from the cells. In one embodiment, the lysing mechanism includes electrodes  
for generating an electric field sufficient to release intracellular contents from the cells.  
10 Alternatively, the lysing mechanism may lyse the cells using chemical, heat and/or ultrasonic  
techniques or any combination of these techniques.